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ABSTRACT

Given the failure of previous research to find consistent effects of class size on students' achievement, this study examined whether teachers in British elementary schools changed their behavior in ways conducive to learning when they worked with classes significantly smaller than average. Seven pairs of elementary school teachers judged as experts by their head-teachers participated in the study, one of each pair in a maintained sector school and one in a private sector school. Fourteen teaching sessions were observed in which teachers presented the same or similar lessons in both large (mean class size 28.8) and small (13.6) class settings. Findings indicated that individual attention was positively, though not significantly, related to class size. Sustained interactions, which allowed children time to think and offer extended and reasoned responses to questions, were more often used in smaller classes. Short, nonextended individual teacher-student interactions tended to increase with class size. There were significant positive correlations between class size and teachers' use of general monitoring and engagement in routine management interactions. Task-focused interactions were negatively but not significantly associated with class size. Challenging questions were used more often in smaller classes. Teachers in larger classes tended to use critical control statements more frequently than teachers in smaller classes. Results suggest that since expert teachers were likely to be proficient at adapting strategies to new situations, teachers may need training in strategies which can be applied with small classes. Schools might also consider creating small classes on a regular basis for some lessons. (Contains 16 references.) (Author/KDFB)

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The effects of major changes in class size on teacher-pupil interaction in elementary school classes in England. Does research merely confirm the obvious?*

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Abstract

Since research on the effects of class size on pupils ' achievement has produced inconsistent results, and has in most cases failed to reveal expected positive effects of small classes, this study focused on whether teachers actually change their behaviour in ways conducive to the promotion of more effective learning when working with significantly smaller classes (mean = 13). Previous systematic observational research had shown little difference between teachers in large and small classes. This study used expert teachers who are thought to be able to adopt new teaching strategies quickly to cope with novel situations. Significant positive correlation coefficients were obtained between class size and teachers' use of general monitoring, engagement in routine management interactions, whereas negative associations emerged between small classes and the use of sustained interactions, and task-focused interaction. Thus, smaller classes were associated with teaching strategies shown elsewhere to promote effective learning. Since expert teachers are likely to be more proficient at adapting their strategies to new situations, there is an implication that teachers need training in the use of strategies which can be applied when working with small classes, and that, in a climate where significant reductions in class size are not economically possible, schools might consider staff deployment to create small classes on a regular basis for some lessons.

Introduction

This paper will report the results of an investigation of the effects of class size on teacher-pupil interaction in K to sixth grade classes in England, where the class size issue has been topical political material particularly in debates preceding the General Election (e.g. Times Educational Supplement 19.7.96). Specifically, the present study sought to identify through systematic classroom observation whether, and if so, in what ways, teachers' classroom behaviour changed when they taught in a large class (ca 30 children) and a small class of (ca 15).

The problem

Research in class size and achievement in the West has generally failed to demonstrate any consistent advantage for children in small classes, whilst children from the classes of well over 40 in countries such as Singapore do extremely well in international tests. In the UK, specifically, large scale studies have shown that children in larger classes do as well or better than those from small classes on either tests of achievement (e.g. HMI, 1978; Mortimore et al., 1988) or composite judgements (OFSTED, 1995) . Nevertheless, as Bennett's (1996) recent survey, has shown, a vast majority of teachers, headteachers and parents expressed preferences for smaller classes, of ca 22 for younger children and ca 25 for eight to eleven year olds. They perceived variously, as detrimental effects of large classes on time for individual attention, children's motivation, classroom discipline, teacher-pupil relationships

and time for assessment. At the time of the survey, the average class size in England was 27 (January 1993) but a third of the teachers had classes of over 31 and two thirds had had a recent increase in class size. Although teachers themselves can see clearly the benefits of working with small classes, there has been no major research in the UK which has attempted specifically to find out what effects working with a small class has on teaching. The present study therefore provided teachers with both large (ca 30) and small classes (ca 15) and systematically observed their teaching behaviour in these two situations.

Previous research on class size in the UK

Previous research has tended to seek relationships between class size and pupil achievement and in general has failed to find a consistent relationship between the two. Her Majesty's Inspectorate (1978), for example, found a net increase in reading ages with class sizes between 20 and 35 and that this result was particularly marked for children in inner city schools. Mortimore et al. (1988) obtained similar results using standardised tests in their junior school study based in London schools. Difficulties with these findings are discussed below.

More recently, the school inspectorate, OFSTED, (1995) have published a report based on analysis of 200, 000 lessons in primary and secondary schools. The report derives an undefined variable called 'quality of pupil learning' which is negatively related to class size at values below 26 for children over seven years of age, and values below 30 for children over age seven. In the basis of this analysis, OfSTED concede a case for reducing class sizes for children up to seven, but argue that for older children, the effectiveness of teaching is a more significant influence on pupils' achievement than class size alone, and suggest that effective teaching includes 'high expectations, good planning, enthusiasm and good feedback to pupils.'. Despite the fact that OFSTED is a 'non-ministerial government department' and that inspectors *are* required as part of the inspection framework to make judgements about a school's 'value for money', the press notice accompanying the class size report pointed out that: 'Analysis of inspection data differs from research into class size in that it is based on disinterested judgements by inspectors for whom the contentious issue of class size was not uppermost in their minds' (OFSTED PN 33/95). The closing paragraph of the report, nevertheless, lists the costs of reducing class sizes by one, two or three pupils which would be £170M, £350M and £540M respectively, whilst £250m would achieve a reduction of three pupils per class for five to seven years olds.

Whilst there are specific problems with the OFSTED report, apart from the 'quality of pupil learning' variable, there are several common difficulties with previous research which has reported on the effects of class size in the UK (see Birstall, 1992; Blatchford and Mortimore,

1994). First, the investigation of class size has rarely been the primary purpose of the research, so a class size analysis has been carried out on data which were collected to fulfil some other purpose. Such research typically has been correlational. No properly controlled experimental or quasi experimental studies have been conducted in the UK so that the effects of general factors such as age-range and gender could not be ruled out. Where class size is examined within a broad range of elementary classrooms, it may be that small classes are used for children with learning or behavioural difficulties, or that the most effective or experienced teachers work with the largest classes. The tests used may lack content validity. Finally, the range of class sizes in most studies is too narrow and the minimum size is too large. Only when class size is reduced to 15 or less do achievement benefits appear, and then only in well controlled studies of class size (see Glass et al., 1981).

Research in small schools, however, does provide a source of very small classes. In a national survey of curriculum provision in small primary schools, the PRISMS study (Galton and Patrick, 1990) class sizes varied from 9 to 33, but correlations between class size and achievement on standardised tests of mathematics and English were almost exactly zero, and achievement was more highly correlated with age than class size (Galton et al., 1987).

Elsewhere, an experimental study in Canada (Sha pson et al., 1980) showed only slight gains in early years in reading and mathematics, when pupils were randomly assigned to classes in sixty-two schools and class size varied between 16 and 37. Pupils were tested both on entry and again after two years. The Tennessee STAR Project (Pate-Bain et al., 1992), however, is the first which clearly demonstrates consistent gains as class size is reduced, particularly for early years children. It was an experimental, longitudinal study involving 79 schools and 7,000 pupils between the ages 5-8. The pupils were randomly assigned to classes of 13 to 17 and 22 to 25 and then followed up to the age of 11. Contrary to UK's OFSTED conclusion that teaching quality is a more influential factor than class size, the STAR researchers argue that class size was the sole explanatory factor in their research. Neither study, however, carried out a systematic examination of classroom process in large and small classes.

Class size and classroom processes

The present study, therefore, addressed the question of whether teachers change their behaviour in large and small classes. Previous systematic observational studies are relevant. In the ORACLE Study (Galton et al., 1980) two of the six teaching styles identified are of interest here. Both were characterised by high levels of individual attention to pupils, but the most successful style, the 'infrequent changer', asked more, and more challenging,

questions, and gave considerably more direct feedback on pupils' work whereas the least successful style, the 'individual monitor', showed high levels of task supervision and marking of pupils' work without direct interaction. Mortimore et al. (1988) have shown also that sustained periods of teacher interaction with individual pupils involving, in particular, challenging questioning and feedback, were crucial determinants of pupil progress. If that is so, then recalling OfSTED's list of characteristics of effective teaching (see above), it would seem obvious that when there are fewer pupils in the class, teachers could devote more time to these kinds of interactions. In the PRISMS study, cited above, however, although systematic classroom observations showed slightly longer interactions times for children in smaller classes, there were no specific differences in types of interaction (Galton and Patrick, 1990). It appeared that teachers simply worked faster in large classes and did not change their teaching strategies according to pupil numbers.

The present study

The present study sought specifically to see whether teachers' behaviour was any different when they were teaching much smaller classes. This would test teachers' own view that small classes would result in more individual attention for pupils (Bennett, 1996). Since, within the confines of the study, the teachers would have to adapt quickly to working with a class of a different size, Berliner's (1992) suggestion that expert teachers are more able to change their strategies in new situations than competent or beginner teachers was taken up. Therefore, the present study set out specifically to manipulate class size and to examine its effects on the classroom behaviour of teachers judged to be experts by their headteachers.

The research strategy

Since classes with fewer than 20 pupils are unusual in maintained schools, the project used teachers in private schools known not to be extreme in the use of formal methods. For the present study, seven pairs of teachers were identified, one of each pair (A) in a maintained sector school and one of each pair (B) in a private sector school. The teachers in a pair taught the same age group or had recent experience of working with the age group they would be teaching in the study. Four reception (K) teachers, two Y2 (2nd grade) teachers, three Y3/4 (3/4 grade) and five Y6 (6th grade) teachers took part. In the 14 teaching sessions observed, the mean size for the small class teaching group was 13.6. The large class size mean was 28.8, ranging from 22 to 32.

The pairs of schools were in the same geographical regions and in similar localities. The study involved three main stages for each teacher, with a fourth stage for four teachers who also taught half their own large classes. First, there was a 'Buddying Day' on which Teacher A

visited B's class for a day to learn the routine, meet the children, and discuss teaching topics with the partner. (Teacher B visited A's class on another day). Then on Teaching Day 1, in B's school, A and B were observed teaching one each lesson to B's class. On Teaching Day 2 in A's school, both B and A were observed teaching a lesson each to B's class. Finally, four of the maintained school teachers were observed teaching a half of their own class. Four of the planned lessons did not take place for a variety of reasons, but in all 28 lessons were observed (and in some cases videoed). The teachers taught the same or a very similar lesson in both settings and their topics included mathematics, English, art, music and history. The distribution of lessons across the sample is shown in Table 1, and more information about the age groups and lessons is shown in Table A .

Table 1 here

Data collection

The main data collection instrument was the *Teacher Record* developed in the ORACLE research project (Galton et al., 1980) and modified very slightly. Briefly, the teacher is observed every twenty-five seconds and any teacher-pupil interaction is recorded according to whether it is a question, statement or feedback, and whether it consists of task content, task supervision, or routine matters such as classroom organisation. It enables the observer to record higher order questions which demand the use of reasoning, problem-solving or imagination, and feedback about the task. The schedule was modified to record sustained interactions. The teachers were interviewed before and after the teaching sessions, and video extracts of the lessons were played back to the teachers for comment.

Analyses

The results reported here are based on correlations between class size and observation categories, one-way analyses of variance with three levels of class size (25 or more; 20 - 24; 19 or less), and within teacher comparisons using chi-square. Where the results failed to reach statistical significance, they are in the predicted directions. For each teacher, the use of each interaction category has been expressed as the proportion of the total number of observations in a lesson given as a percentage.

Results

Teacher audience

The first analyses concern the teachers' attention, predicted to show an increase in individual attention in the smaller classes. The results in Table 2 do not appear to support practitioners'

and parents' perceptions that smaller classes lead to increases in individual interactions with the teacher for pupils. In fact individual attention is positively, though non-significantly, correlated with class size which suggests a slight increase in one-to-one interactions in larger classes. Teachers' use of 'group' as audience is the most prominent coefficient. This suggests that rather than addressing individuals or the whole class relatively more often in the large class setting, the children in large classes were relatively more often addressed in groups, thereby receiving a 'dilution' of the teacher's attention. In contrast, the use of whole class as audience occurred increasingly with decreasing class size.

Table 2 here

This is supported by material from the teacher interviews wherein several spoke of the need to gauge understanding on progress in a task on a group by group basis in practice in large classes, rather than, as in the small class setting by spending more time with individuals. For example, after working with a class of 11 in contrast to her usual 28, one teacher felt that she could assess exactly what to do next for the children in the small class after only one session, whereas...

> Even now after a term and a half with that class, you still get it wrong in terms of planning because you are not totally sure who is absolutely concrete, who is neutral position, and things like that. I've had them banded into groups within the class for ability, for different activities, but with eleven in a class, you know where they all are, because you've had time to give them.

When examining the differences in individual teachers' behaviour in large and small classes, it is interesting to note that four out of five significant chi-square analyses, the teachers individual interactions were less often with boys. In the fifth case, the small class consisted of ten boys and one girl. If it is the case that boys get more attention than girls in classrooms, then in small classes some teachers are able to redress this imbalance.

The use of sustained interactions

The important and statistically significant relationship shown in Table 2 is the greater use of 'sustained interactions' in smaller classes. These represent occasions when the teacher interacts with the same individual without interruption for at least two consecutive 25 second time signals. Figure 1 shows that the mean use of sustained interactions in classes of 19 or less was double (19.0 ±13.7) that used in classes of 25 or more (8.6± 5.3) and that the distribution was much narrower in large classes ($F = 2.53$, df 2,25; $p = 0.05$ (one tail)) a significant finding given that it is in the predicted direction.

Figure 1: The use of sustained interactions broken down by class size - HERE

The use of sustained interactions provides the opportunity for teachers to promote children's conceptual understanding further by feeling able to spend longer amounts of time with individual pupils, allowing the children time to think and giving them the opportunity to offer extended and reasoned responses to questions. This finding is also supported by the teachers' comments of which the following are typical:

> I am giving the children more time to think, and, having asked my question I would give them a bit more space and time.
>
> ' ... being able to spend the time hearing that they have got to grips with the task, instead of walking past and making assumptions.

and, for a reception teacher, being able not only to 'throw in a question' as two children worked on a construction activity, but also, 'wait to find a solution.'

In summary, the results in Table 2 show that short, non-extended individual teacher-pupil interactions tend to increase with class size, but this is countered by an increase in extended interactions of more than 25 seconds as class size decreases particularly at values below 19.

Teachers' use of questions

Table 3 shows the relationships between class size and the teacher-pupil interaction categories. The strongest positive correlation is between class size and general monitoring which is recorded when the teacher is surveying the class but is not interacting in any way with the children. The remaining significant associations are between class size and routine interactions. These include questions, statements and feedback about children's behaviour, organisation into groups, collecting and distributing books and so on. It is clear from the table, that teacher-pupil interactions are increasingly concerned with routine matters and classroom management as class size increases, where as task-focused interactions are negatively but not significantly associated with class size. Taken altogether, however, the pattern of the table shows that task-based interactions and, in particular, challenging questions in which children have to give reasons, or offers a variety of possible responses to open ended questions, were used more often in smaller classes.

Table 3 Here

Figure 2 shows the percentage of statements of critical control as a proportion of all routine statements as used in large, medium and small classes. There is a tendency for teachers in larger classes to use critical control statements more frequently than teachers in smaller classes.

Figure 2 here

The pattern to emerge so far is that in the smaller classes teachers engage in more enquiring questioning, ask more task questions, make more task statements and are generally more involved with task when interacting with pupils. This comes about, in part, because in the larger classes more time is spent on management routines where, in particular, teachers find it necessary to deal with problems of classroom control, although our observations suggest that these problems take the form of minor incidents to do with not paying attention rather than involving serious disruption to lessons. When the proportion of feedback as a percentage of all task supervision was determined, a trend such that in smaller classes a greater proportion of task supervision concerns feedback on work. Feedback has been shown in many research studies to be a crucial determinant of pupil progress.

Individual teachers working in large and small classes

Individual (chi-square) analyses of the teachers' behaviour in small and large class settings revealed that where comparisons were significant these were consistently in the predicted directions. For routine classroom management, the three teachers whose practice was significantly different in the two settings , all show less routine interactions in small classes, whilst the seven teachers who used significantly more task-focused interactions did so when in small classes. Five teachers individually used more sustained interaction in small classes, whilst four used more class audience, but two used less. Finally, it is notable that whilst four individual teachers used individual one- to one interaction less frequently in small classes, and two used more, in four cases there were significantly fewer individual interaction with boys in the small classes. In the one session where the teachers used more boy-individual interactions there were nine boys and only one girl in the class.

In interviews with the teachers after the teaching sessions they all expressed a very strong sense of having time: time to spend with children, time to assess formatively their needs, time to give task-focused attention to children who normally received more interactions concerning inappropriate behaviour, and time to give children space to think and reflect as they answered questions. Their main concern was that they did not know the children in the 'away' settings, but that after working with them in small class settings they felt well-informed about individual needs.

Conclusion and implications

Thus overall the patterns established are such that those aspects of teaching which research has shown to best promote pupil achievement, are all present in greater amounts in smaller classes. Pupils are challenged more often, got longer periods of teacher attention, and experienced relatively less critical control and routine management and relatively more of the teacher's talk spent on the task, when in small classes. In contrast, in larger classes teachers were less likely to engage in task related talk with pupils, but instead tended to concentrate on classroom management .

The results do confirm the obvious in that the larger the class the more time the teacher must spend organising and managing the children, and maintaining appropriate behaviour. At the same time what is less obvious is that further unanticipated finding is the association between whole class teaching and smaller classes, where more whole class teaching might be expected in larger classes In fact teachers tended to use a whole class audience more often in smaller classes.

There are two major implications for practice. First, the teachers from large classes were regarded as successful teachers and yet had difficulty in maximising the opportunities offered by the small class setting, largely of course because they were unfamiliar with such small numbers. They commented that they regularly ' looked round for the other half'. The implication here is the need for further training for teachers to use and apply strategies, such as asking more challenging questions, ensuring balanced attention to boys and girls, and spending longer with individuals, pairs or small groups, when working with small classes. The second implication is for schools to consider how they can provide children and teachers with the opportunities to work regularly in groups of 15 or less.

Finally, the experience of teaching a small class is summed up in the words of one teacher who normally teaches 30 eight year olds:

> My feeling about teaching here today.. (was)...of the potential, of what you can actually do, and what the job could really be about.

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References

Bennett, N. (1996). Class size in primary schools: perceptions of headteachers, chairs of governors, teachers and parents, *British Educational Research Journal, 22* (1) 33 - 56.

Berliner, D. (1992) Some Characteristics in Experts in the Pedagogical Domain, in Oser, F., Dick, A. and Patry, J. (eds) *Effective and Responsible Teaching: The New Synthesis.* San Francisco: Jossey-Bass Press.

Blatchford, P. and Mortimore, P. (1994) The Issue of Class Size for Young Children in Schools: what can we learn from research? *Oxford Review of Education,* (20), 4, 411-27.

Borko, H. and Livingston, C. (1989) Cognition and Improvisation: Differences in Mathematics Instruction by Expert and Novice Teachers. *American Educational Research Journal,* 26 (4), 473-498.

Burstall, C. (1992) Playing the numbers game in class. *Education Guardian,* 7th April.

Galton, M., Simon, B. and Croll, P. (1980) *Inside the Primary Classroom.* London: Routledge & Kegan Paul.

Galton, M., Bernbaum, G., Patrick, H., Appleyard, R. and Hargreaves, L. (1987) *Educational Provision in Small Primary Schools.* Final Report to the Department of Education and Science.

Galton, M. and Patrick, H. (eds.) (1990) *Curriculum Provision in the Small Primary School.* London: Routledge.

Glass, G., McGaw, B. and Smith, M.L. (1981) *Meta-analysis in social research.* Beverley Hills CA: Sage.

HMI (1978) *Primary Education in England: A Survey by HM Inspectors of Schools.* London, HMSO.

Mortimore, P., Sammons, P., Stoll, L. D. and Ecob, R. (1988) *School Matters: The Junior Years,* Wells: Open Books.

OFSTED (1995) *Class Size and the Quality of Education,* London : OFSTED

Pate-Bain, H., Achilles, C., Boyd- Zaharius, J. and McKenna, B. (1992) Class size makes a difference. *Phi Delta Kappa,* (74) 253-6.

Plunkett, D. (1996) Snapshot in the dark. *Education,* 1st March, 12-13.

Shapson, S. M., Wright, E. N., Eason, G., and Fitzgerald, J . (1980) An experimental Study of the Effects of Class Size. *American Education Research Journal,* (65), 107-12.

Slavin, R. (1989) Class Size and Student Achievement: small effects of small classes. *Educational Psychologist,* (24), 99-110.

Tables

Table 1: Distribution of lessons across class sizes and private and /ṁaintained sectors

N teachers	private small (home)	private small (away)	maintained large (home)	maintained large (away)	maintained half=small (home)	N lessons
5						10
4						12
1						2
1						1
2						2
1						1

Teacher audience category as % of recorded observations	Pearson correlation (n= 28)
individual boy or girl	.24
boy or girl for group	.24
group	.42*
boy or girl for whole class	-.22
whole class	-.12
sustained interaction i.e. individual or group interaction sustained over at least two time signals	-.39*

Table 2 : Correlations between teacher audience categories and class size

Table 3: Correlations between teacher interaction categories and class size here

Teacher-pupil interaction categories (percentage of total observations for session)	Pearson correlation coefficient (N = 28)
task questions	-.23
challenging questions	-.25
task statements	-.29
task supervision	-.06
feedback on work/effort	-.34
general monitoring	.49**
routine/class management questions and statements	.37*
feedback (neutral)	.38*
feedback (positive)	.38*
critical control	.26

Figure 1: The use of sustained interactions in large, medium and small classes

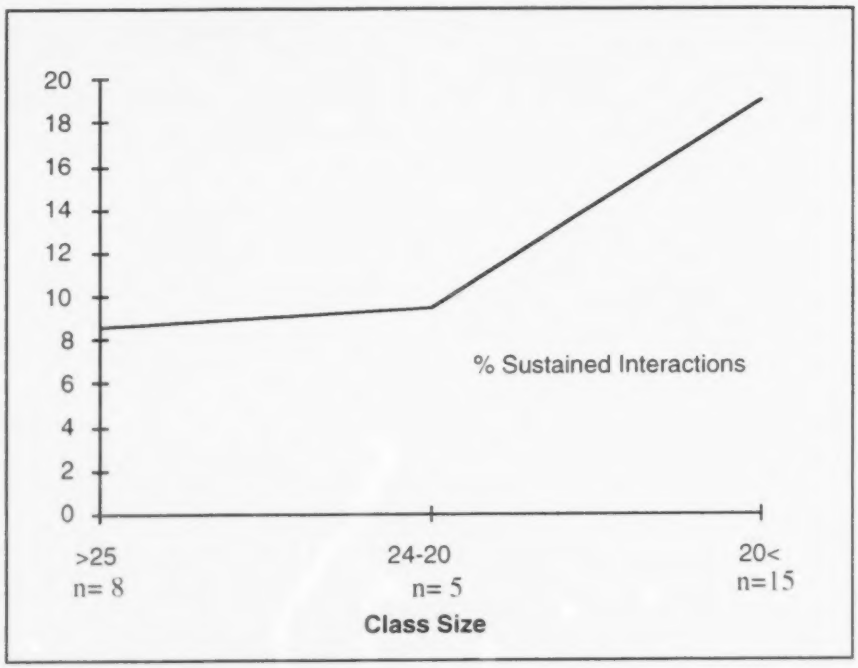

Figure 2: Critical control as a percentage of all routine

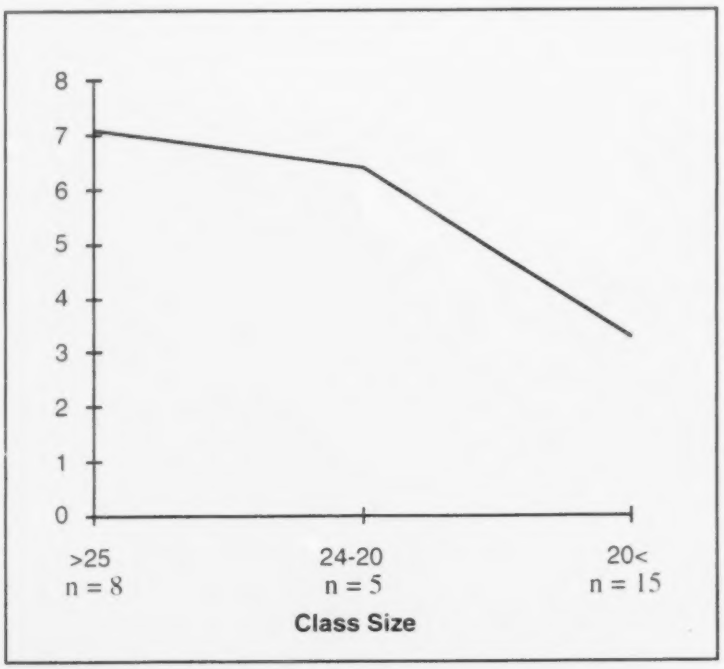

Table A

Class size report : details of teachers, class sizes and curricular content of lessons

year-group	teacher code*	N home class	curricular content	teacher code	N away class	curricular content	teacher code	N half class	curricular content
Y2	111	11	art	112	22	art			
Y2	121	22	music	122	11	music			
Y6	211	21 (girls)	history-English	212	29	history	221	16	art -
Y6	221	29	math/Eng/hist	222	17	maths			
R	311	17	English/maths	312	32	science-maths			
R	321	31	English/others	322	15	science-English	321	15	English
R	411	13	maths-art	412	30	maths-art			
R	421	30	*n/o*	422	13	English			
Y6	511	19	history	512	*n/o*	*n/o*			
Y6	521	*n/o*	*n/o*	522	19	art			
Y3--4	611	10	art	612	28	English			
Y6	621	28	maths	622	10	maths	621	14	maths
Y3	711	21	geog - English	712	*n/o*	*n/o*			
Y3	721	32	English	722	21	English	721	16	English

*teacher codes: **abc** where **a** = geographical area; **b** =school type 1= private, 2 = state maintained; **c** 1 = home, 2 = away
n/o = not observed; maths/Eng = distinct curricular activities; maths-Eng. = cross-curricular activity